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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT C. STEINER, ANDREW D. FLOCKHART, and
JOYLEE KOHLER

Appeal 2016-004534
Application 13/622,538¹
Technology Center 3600

LARRY J. HUME, NORMAN H. BEAMER, and
MATTHEW J. McNEILL, *Administrative Patent Judges.*

BEAMER, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1, 3–11, and 13–22, which are all claims pending. Claims 2 and 12 are cancelled. We have jurisdiction over the pending rejected claims under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants identify Avaya, Inc. as the real party in interest. (App. Br. 2.)

THE INVENTION

Appellants' disclosed and claimed invention is directed to analyzing work assignments in a call center to determine one or more scarce resources for further management. (Abstract.)

Independent claim 1, reproduced below, is illustrative of the subject matter on appeal:

1. A method, comprising:

analyzing, by a scarce resource manager executed by a microprocessor in a server, work assignments made at a contact center, wherein the work assignments include assigning work items to resources of the contact center;

determining, by the scarce resource manager and based on results of the analysis, a pattern of work assignments made to the resources of the contact center, wherein the pattern of work assignments is at least partially based on attribute data associated with the work assignments made;

determining, by the scarce resource manager, a demand for one or more attributes in the attribute data of the pattern of work assignments made, wherein the demand is based on a ratio of work item requests and available resources having the one or more attributes at the contact center;

identifying one or more resources having the one or more attributes as scarce based on the demand determined;

marking, by the scarce resource manager, the one or more scarce resources with a scarcity value, wherein the scarcity value indicates a relative scarcity of the one or more scarce resources, wherein marking includes modifying an identifier in a data structure associated with the one or more scarce resources; and

managing the one or more scarce resources differently than other resources of the contact center in work assignment allocations, wherein managing the one or more scarce resources is based at least partially on the scarcity value of the one or more scarce resources.

REJECTIONS

The Examiner rejected claims 1, 3–11, and 13–22 under 35 U.S.C. § 101 as directed to unpatentable subject matter. (Final Act. 3.)

The Examiner rejected claims 1, 3, 4, 7, 9–11, 13, 14, and 17–21 under 35 U.S.C. § 103(a) as being unpatentable over Jordan et al. (US 2008/0065450 A1, pub. Mar. 13, 2008 (“Jordan”), Shaffer et al. (US 2005/0195960 A1, pub. Sept. 8, 2005) (“Shaffer”), and Cave et al. (US 6,845,154 B1, issued Jan. 18, 2005) (“Cave”). (Final Act. 4–19.)

The Examiner rejected claims 5, 6, 8, 15, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Jordan, Shaffer, Cave and Fama (US 2011/0112879 A1, pub. May 12, 2011). (Final Act. 19–23.)

The Examiner rejected claim 22 under 35 U.S.C. § 103(a) as being unpatentable over Jordan, Shaffer, Cave and Flockhart (US 2005/0071241 A1, pub. Mar. 31, 2005). (Final Act. 23.)

ISSUES ON APPEAL

Appellants’ arguments in the Appeal Brief present the following issues:²

Issue One: Whether the pending claims are directed to unpatentable subject matter. (App. Br. 7–11.)

Issue Two: Whether the Examiner erred in finding the combination of Jordan, Shaffer, and Cave teaches or suggests the limitations of independent claims 1, 11, and 19. (App. Br. 11–15.)

² Rather than reiterate the arguments of Appellants and the positions of the Examiner, we refer to the Appeal Brief (filed Aug. 27, 2015); the Reply Brief (filed Mar. 28, 2016); the Final Office Action (mailed Mar. 6, 2015); and the Examiner’s Answer (mailed Jan. 29, 2016) for the respective details.

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellants’ arguments the Examiner erred. We disagree with Appellants’ arguments, and we adopt as our own (1) the pertinent findings and reasons set forth by the Examiner in the Action from which this appeal is taken (Final Act. 3–23) and (2) the corresponding findings and reasons set forth by the Examiner in the Examiner’s Answer in response to Appellants’ Appeal Brief (Ans. 2–9). We concur with the applicable conclusions reached by the Examiner, and emphasize the following.

Issue One

The Examiner concludes the pending claims are invalid under 35 U.S.C. § 101 because the “claimed invention is directed to a judicial exception (i.e., an abstract idea) without significantly more.” (Final Act. 3 (emphasis omitted).) In particular, the Examiner concludes:

[The claims] are directed to allocating tasks to resources based on task attributes and resource scarcity. The claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the method claims merely recite the abstract idea implemented on a generic computer; and the system and computer readable media claims recite a handful of generic computer components configured to implement the same idea.

(Id.)

Appellants argue the Examiner’s “stated level of abstraction . . . is too high,” and a proper view of the claims is that they “‘perform a real-world function’ and are not directed to . . . an abstract idea.” (App. Br. 8.) In addition, Appellants argue the claim requirement of marking a resource with a scarcity value by modifying an identifier in a data structure “cannot be

construed as an abstract idea.” (*Id.*) Appellants further argue the claims do not “‘tie up’ or preempt the entire human endeavor of ‘allocating tasks to resources based on task attributes and resource scarcity.’” (App. Br. 9.) Finally, Appellants argue “the pending claims recite a method that significantly improves the technical field of managing scarce resources in a contact center environment.” (App. Br. 11.)

We do not find Appellants’ arguments persuasive. Instead, we find the Examiner has provided a comprehensive response to Appellants’ arguments supported by a preponderance of evidence. (Ans. 2–6). As such, we adopt the Examiner’s conclusions provided in the Final Action and Answer. The Supreme Court has long held that “[l]aws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice*, 134 S. Ct. at 2354 (quoting *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116 (2013)). The “abstract ideas” category embodies the longstanding rule that an idea, by itself, is not patentable. *Alice Corp.*, 134 S. Ct. at 2355 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

In *Alice*, the Supreme Court sets forth an analytical “framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Id.* at 2355 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1296–97 (2012)). The first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts,” such as an abstract idea. *Id.* If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims “individually and ‘as an ordered combination’” to determine whether there are additional elements that

“‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo*, 132 S. Ct. at 1298, 1297). In other words, the second step is to “search for an ‘inventive concept’—i.e., an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (brackets in original) (quoting *Mayo*, 132 S. Ct. at 1294). The prohibition against patenting an abstract idea “cannot be circumvented by attempting to limit the use of the formula to a particular technological environment’ or adding ‘insignificant postsolution activity.’” *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (citation omitted).

Appellants argue the claims as a group, so we select claim 1 as representative when evaluating whether the claims are patent-eligible under § 101. *See* 37 C.F.R. § 41.37(iv). Turning to the first step of the *Alice* inquiry, we agree with the Examiner that Appellants’ claim 1 is directed to an abstract idea of “allocating tasks to resources based on task attributes and resource scarcity.” (Final Act. 3). All the steps recited in claim 1, including: (i) “analyzing . . . work assignments”; (ii) “determining . . . a pattern of work assignments . . . based on attribute data”; (iii) “determining . . . a demand for . . . attributes . . . based on a ratio of work item requests and available resources”; (iv) “identifying . . . resources . . . as scarce”; (v) “marking . . . scarce resources with a scarcity value”; and (vi) “managing . . . scarce resources . . . based on . . . the scarcity value”, are directed to the Examiner’s correct characterization of the abstract idea that is the subject of the claims — “allocating tasks to resources based on task attributes and resource scarcity” — which is a fundamental economic and conventional business practice.

There is no definitive rule to determine what constitutes an “abstract idea.” Rather, the Federal Circuit has explained that “both [it] and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016); *see also Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that, in determining whether claims are patent-eligible under § 101, “the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided”). The Federal Circuit also noted that “examiners are to continue to determine if the claim recites (i.e., sets forth or describes) a concept that is similar to concepts previously found abstract by the courts.” *Amdocs*, 841 F.3d at 1294 n.2 (citation omitted).

The steps recited in the claims involve nothing more than collecting, normalizing, analyzing, and acting upon data. The subject matter of the claims can be performed either mentally or with “pencil and paper.” *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011). “A method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.” 654 F.3d at 1373. In this regard, the claims are similar to the claims that the Federal Circuit determined are patent ineligible in *Elec. Power Grp. LLC v. Alstom*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016) (collecting information and “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category”), *OIP Tech., Inc. v. Amazon.com, Inc.*, 788 F.3d

1359, 1362–63 (Fed. Cir. 2015) (offer-based price optimization), *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015) (tailoring information presented to a user based on particular information), *Digitech Image Techs., LLC v. Elecs. For Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014 (employing mathematical algorithms to manipulate existing information), *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1346 (Fed. Cir. 2013) (generating tasks in an insurance organization), and *Versata Dev. Grp. v. SAP Am.*, 793 F.3d 1306, 1333–24 (Fed. Cir. 2015) (price-determination method involving arranging organizational and product group hierarchies).

Moreover, we are unpersuaded by Appellants’ argument that the claims do not preempt every application of some abstract idea and are, therefore, patentable. (App. Br. 9). Lack of preemption does not make the claims any less abstract. *See buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (collecting cases); *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013); *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (“While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility”).

Turning to the second step of the *Alice* inquiry, we find nothing in the claims that adds anything “significantly more” to transform the abstract concept of allocating tasks to resources based on task attributes and resource scarcity. *Alice*, 134 S. Ct. at 2357. Beyond that abstract idea, the claims merely recite “well-understood, routine conventional activit[ies],” either by requiring conventional computer activities or routine data-gathering steps. *Alice*, 134 S. Ct. at 2359 (quoting *Mayo*, 132 S. Ct. at 1294). Considered

individually or taken together as an ordered combination, the claim elements fail “to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Id.* at 2357 (quoting *Mayo*, 132 S. Ct. at 1294, 1298). For example, claim 1 recites “execut[ion] by a microprocessor in a server,” and “modifying an identifier in a data structure.” Just as in *Alice*, “these computer functions are ‘well-understood, routine, conventional activit[ies],’ previously known to the industry.” *Alice*, 134 S. Ct. at 2359 (quoting *Mayo*, 132 S. Ct. at 1294); *see also buySAFE*, 765 F.3d at 1355 (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”); *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (a computer “employed only for its most basic function . . . does not impose meaningful limits on the scope of those claims”). The broadly recited computer implementation limitations of the claims do little to limit their scope. Indeed, the Specification makes clear that the methods are “implemented by hardware, software, firmware, middleware, microcode, hardware description languages, or any combination thereof.” (Spec. ¶ 77.)

Thus, we are not persuaded the claims “significantly improve[s] the technical field of managing scarce resources in a contact center environment.” (App. Br. 11.) In particular, we do not agree with Appellants’ argument, “[m]odifying the identifier in a data structure by the scarce resource manager as claimed cannot be construed as an abstract idea.” (App. Br. 8.) As the Examiner states:

Examiner simply disagrees with the notion that marking, i.e., modifying a data label, represents a manipulation of computer data structures (e.g., the pixels of a digital image and a two dimensional array) that could not be performed entirely in a

human's mind Rather, Examiner submits that such a process is analogous to a human utilizing a pencil to check a box marked “scarce” next to the name of a resource on a piece of paper.

(Ans. 5–6.) The Examiner’s analogy to checking a box is borne out by the Specification: “this marking may include modifying a bit identifier in a data structure associated with a resource.” (Spec. ¶ 44.) Such is merely the digital equivalent of “checking a box.”

Because Appellants’ claims are directed to a patent-ineligible abstract concept and do not recite something “significantly more” under the second prong of the *Alice* analysis, we sustain the Examiner’s 35 U.S.C. § 101 rejection of claims 1, 3–11, and 13–22.

Issue Two

Appellants argue the Examiner errs because Jordan does not teach or suggest the required “analyzing . . . work assignments made at a contact center” or “determining . . . a pattern of work assignments made to the resources of the contact center” — instead, Appellants argue, Jordan is directed to making work assignments, rather than analyzing work assignments already made or determining the pattern of such assignments. (App. Br. 12–14.) However, we are not persuaded the Examiner errs in finding Jordan’s disclosure of basing work assignments in part on “historic agent performance data” at least teaches or suggests these limitations. (Final Act. 4–5; Ans. 7–8; Jordan ¶¶ 14, 17, 18, 21.)

Appellants also argue Cave does not teach or suggest the claim requirement, “marking . . . [the] one or more scarce resources with a scarcity value,” but rather provides “prioritizing requests . . . according to a hierarchy of pools.” (App. Br. 15.) However, we are not persuaded the Examiner errs

in finding Cave's disclosure of prioritization based on "order of economic value or demographic scarcity" at least teaches or suggests this limitation. (Final Act. 6; Ans. 8; Cave col. 31, ll. 20–31.)

CONCLUSION

For the reasons stated above, we sustain the rejections of claims 1, 3–11, and 13–22 as directed to unpatentable subject matter, and the obviousness rejection of independent claims 1, 11, and 19 as unpatentable over Jordan, Shaffer, and Cave. We also sustain the obviousness rejections of claims 3, 4, 7, 9, 10, 13, 14, 17, 18, 20, and 21 over Jordan, Shaffer, and Cave, of claims 5, 6, 8, 15, and 16 over Jordan, Shaffer, Cave and Fama, and of claim 22 over Jordan, Shaffer, Cave and Flockhart, which rejections are not argued separately with particularity. (App. Br. 15–21.)

DECISION

We affirm the Examiner's decision rejecting claims 1, 3–11, and 13–22.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* C.F.R. § 41.50(f).

AFFIRMED